

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A hydraulic power steering system for use in a vehicle to eliminate energy waste when power assist is not required comprising:

a pulley powered by a crankshaft in said vehicle;

a hydraulic pump driven by a belt off of said pulley;

a clutch coil positioned between said pulley and said hydraulic pump, wherein said clutch coil is operably connected to said pulley;

a hydraulic pump operably connected to said clutch; and

controlling means for engaging and disengaging said clutch with said pulley and said hydraulic pump to provide hydraulic power to said system;

a hydraulic accumulator operably connected to said controlling means to insure that hydraulic power is available when said clutch is disengaged, wherein said hydraulic accumulator dampens transients in the hydraulic system such that the need for hydraulic noise reducing components are not required;

a check valve operably connected to said hydraulic pump to maintain hydraulic pressure in said hydraulic accumulator when said clutch is disengaged;

a reservoir containing hydraulic fluid wherein said reservoir is operably connected to said power steering pump, wherein said reservoir has a hydraulic fluid capacity equal to the difference between the maximum charged amount of hydraulic fluid and the minimum discharged amount of hydraulic fluid in the hydraulic accumulator;

a rotary actuated control valve operably connected to said reservoir and to said check valve, wherein said rotary actuated control valve is provided with a closed center to maintain pressure in said hydraulic accumulator until needed; and

a power assist steering cylinder operably connected to said rotary actuated proportional valve and to a steering rack to provide power assist steering for said vehicle.

2. (Currently Amended) The ~~hydraulic steering~~ system of claim 1 wherein said steering system means is a power assisted steering system.

3. (Original) The system of claim 1 wherein said controlling means is a hysteresis pressure switch.

4. (Original) The system of claim 3 further comprising an electrical power source operably connected to said hysteresis pressure switch.

5. (Original) The system of claim 4 wherein said electrical power source is a vehicle ignition control system.

6. (Withdrawn) The system of claim 1 wherein said controlling means is a microprocessor.

7. (Withdrawn) The system of claim 7 wherein said microprocessor receives input from at least one of a pressure sensor, steering wheel rotation sensor and vehicle speed sensor

8 - 14 (Canceled)

15. (Currently Amended) A hydraulic power steering system for use in a vehicle to eliminate energy waste when power assist is not required comprising:

a pulley powered by a crankshaft in said vehicle;

a hydraulic pump driven by a belt off of said pulley;

a clutch coil positioned between said pulley and said hydraulic pump, wherein said clutch coil is operably connected to said pulley;

a hysteresis pressure sensor for engaging and disengaging said clutch with said pulley and said hydraulic pump to provide hydraulic power to said system.

a vehicle ignition power source;

a hydraulic accumulator operably connected to said hysteresis pressure switch to insure that hydraulic power is available when said clutch is disengaged, wherein said hydraulic accumulator dampens transients in the hydraulic system such that the need for hydraulic noise reducing components are not required;

a check valve operably connected to said hydraulic pump to maintain hydraulic pressure to said hydraulic accumulator when said clutch is disengaged;

a reservoir containing hydraulic fluid, said reservoir being operably connected to said power steering pump, wherein said reservoir has a hydraulic fluid capacity equal to the difference between the maximum charged amount of hydraulic fluid and the minimum discharged amount of hydraulic fluid in the hydraulic accumulator;

a rotary actuated control valve operably connected to said reservoir and to said check valve, wherein said rotary actuated control valve is provided with a closed center to maintain pressure in said hydraulic accumulator until needed; and

a power assist steering cylinder operably connected to said rotary actuated proportional valve and to a steering rack to provide power assist steering to said vehicle.

16 - 17 (Canceled)

18. (Currently amended) A hydraulic power steering system for use in a vehicle to eliminate energy waste when power assist is not required comprising:

a pulley powered by a crankshaft in said vehicle;

a hydraulic pump driven by a belt off of said pulley;

a clutch coil positioned between said pulley and said hydraulic pump, wherein said clutch coil is operably connected to said pulley;

a hydraulic pump operably connected to said clutch;

a microprocessor for engaging and disengaging said clutch with said pulley and said hydraulic pump to provide hydraulic power to said system wherein said microprocessor receives input from at least one of a pressure sensor, steering wheel rotation sensor and vehicle speed sensor;

a hydraulic accumulator operably connected to said microprocessor ~~hysteresis pressure switch~~ to insure that hydraulic power is available when said clutch is disengaged, wherein said hydraulic accumulator dampens transients in the hydraulic system such that the need for hydraulic noise reducing components are not required;

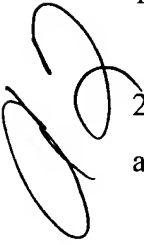
a check valve operably connected to said hydraulic pump to maintain hydraulic pressure to said hydraulic accumulator when said clutch is disengaged;

a reservoir containing hydraulic fluid, said reservoir being operably connected to said power steering pump, wherein said reservoir has a hydraulic fluid capacity equal to the difference between the maximum charged amount of hydraulic fluid and the minimum discharged amount of hydraulic fluid in the hydraulic accumulator;

a rotary actuated control valve operably connected to said reservoir and to said check valve, wherein said rotary actuated control valve is provided with a closed center to maintain pressure in said hydraulic accumulator until needed; and

a power assist steering cylinder operably connected to said rotary actuated proportional valve and to a steering rack to provide power assist steering to said vehicle.

19 - 20 (Canceled)



21. (New) The system of claim 1 wherein said controlling means is integrated into said hydraulic accumulator.

22. (New) The system of claim 21 wherein said controlling means is a hysteresis pressure switch.

23. (New) The system of claim 21 wherein said controlling means is a microprocessor.

24. (New) The system of claim 15 wherein said controlling means is integrated into said hydraulic accumulator.

25. (New) The system of claim 24 wherein said controlling means is a hysteresis pressure switch.

26. (New) The system of claim 24 wherein said controlling means is a microprocessor.

27. (New) The system of claim 18 wherein said controlling means is integrated into said

hydraulic accumulator.

28. (New) The system of claim 27 wherein said controlling means is a hysteresis pressure switch.

29. (New) The system of claim 27 wherein said controlling means is a microprocessor.
